

EXHIBIT A
CONTRACTOR SPECIFICATIONS FOR
SLUDGE REMOVAL AND RELATED CITY OBLIGATIONS

A. BACKGROUND

This Exhibit A supplements the contract for sludge services between the City and the Contractor. It gives additional technical details about Contractor's Work, and certain obligations the City retains with regard to the sludge it generates.

The City of Durham owns and operates two water reclamation (wastewater treatment) facilities and two drinking water treatment facilities that serve the City of Durham and much of Durham County. These facilities produce sludge, which is the solid or semi-solid material removed after the City's respective treatment processes. This sludge is typically spun, dried, or pressed so that it becomes dewatered. Sludge is generally stored at the city's facilities for numbers of months before ultimate disposition, which is through land application in accordance with the city's permit from the state. Storage is in separate piles by month in which the sludge was generated and by other criteria. The city conducts tests for vector attraction reduction and for pathogens on the stockpiled sludge. The City's stockpiled sludge is hauled, on a periodic basis generally at 3 to 4 month intervals, by the Contractor to the land that has been permitted for land application. Contractor is generally responsible for certain testing as herein described, sludge hauling, the state permitting process, landowner contacts, and compliance with permit requirements regarding land application. Periodically, the City may direct Contractor to perform vector attraction reduction through alkaline stabilization on stockpiled sludge when the city's vector attraction reduction process has been inadequate, or to do vector attraction reduction through incorporation into soil at the time of application. In addition, periodically the City may direct Contractor to haul liquid sludge for land application, or to haul dewatered sludge to landfills.

Following is the list of the City's treatment plants and additional information regarding estimates of sludge produced and methods of producing and storing sludge.

South Durham Water Reclamation Facility: 6605 Farrington Rd, Chapel Hill, NC 27514

Sludge estimate: 13,000 cubic yd. per year

Production method: Belt presses for mechanical dewatering; sand drying beds.

Storage: Concrete stockpile pad at the plant site.

North Durham Water Reclamation Facility: 1900 East Club Blvd. Durham, NC 27704.

Sludge estimate: 13,000 cubic yd. per year

Production method: Belt presses for mechanical dewatering; sand drying beds.

Storage: Concrete stockpile pad at the plant site.

Williams Water Treatment Plant: 1405 Hillandale Rd, Durham, NC. 27705

Sludge estimate: 2,500 cubic yd. per year

Production method: Centrifuge for dewatering; sand drying beds.

Brown Water Treatment Plant: 1615 Infinity Road, Durham, NC 27712

Sludge estimate: 5,500 cubic yd. per year

Production method: Sand drying beds and temporary dewatering

B. GENERAL

1. City and Contractor Obligations under Existing Permit. The City of Durham holds Permit Number WQ0003504 (the "permit") issued by the State of North Carolina on July 9, 2012, which expires on October 31, 2015. This Permit is for land application of water, wastewater, and mixed sludge. Except as otherwise noted in this contract, the City will be responsible for assuring all sludges that are transported from the City's plants for land application are suitable for land application according to the provisions of the Permit and 40 CFR Part 503 rules. The Contractor shall be responsible for compliance with all other provisions of the Permit, as it may be amended or renewed, including but not limited to requirements as to application, determination of correct amounts and ratios of sludge to apply to permitted land, and soil testing subsequent to application. Contractor shall land apply sludges from the City of Durham only under the provisions of the permit only to sites identified in the permit. The Contractor must also comply with all other statutes, rules, regulations or ordinances which may be imposed by other government agencies (local, state and federal) which have jurisdiction. The most notable additional rule is 40 CFR Part 503 as promulgated by the U.S. Environmental Protection Agency. References to 40 CFR Part 503 shall include any amendments thereto and any replacement regulations.
2. Land Acquisition and Permitting: The Contractor shall have sufficient land available to accommodate all the sludge stored and generated by the City of Durham during the contract period based on the limiting factor for sludge application rates, and any other permit requirements. The Contractor must obtain for the City all applicable landowner agreements, permits, and permit amendments from the North Carolina Department of Environment and Natural Resources (NC DENR). The contractor is responsible for all obligations of the Permittee related to information and report-sharing and communication with the landowner under the landowner agreements the Contractor is responsible for all activities necessary to add new parcels of land to those already permitted under the city permit. These activities include but are not limited to identification of parcels, landowner negotiation and approvals, execution of landowner agreements, testing and site analysis (topography, soil analysis, etc.), and notification of appropriate governmental authorities. The Contractor is responsible for preparing the necessary documents to amend the Permit in order to add or delete parcels of land. The agricultural land permitted for the City of

Durham must not be used for application of municipal or industrial sludge, or for other waste disposal purposes, from sources other than the City of Durham during the City's permit period.

3. Unless otherwise specified, the Contractor shall provide all necessary materials, labor, and equipment for sludge removal and blending, sludge transportation, sludge application and lime application as necessary.
4. **Spill Control and Reporting.** The Contractor shall develop and have approved by the City, an emergency spill control plan. The Contractor will follow all aspects of the plan while conducting operations. The plan shall provide for the prompt cleanup of spills in compliance with all applicable requirements under the permit and state and federal regulations. The plan should be available at the land application site as well as in all vehicles transporting biosolids. All spills shall be reported to the City immediately, if on City property, or within 12 hours, if not on City property. Contractor shall be responsible for all additional reporting of such spills required by the permit or state or federal regulations.
5. **Responsible Person.** While conducting operations, the Contractor shall always have a responsible person in charge. The City shall be notified as to the identity of this person or his/her substitutes. This person(s) shall have the authority to make management decisions for the Contractor. The person(s) shall possess all necessary certifications which are required by the State of North Carolina or that may be required in the future. This person should be available by telephone or pager during all hours when the Contractor is conducting operations pursuant to this Contract.
6. **Agency Contacts.** Should the Contractor need to contact a local, state, or federal agency having regulatory authority over sludge application, the Contractor will attempt to first contact the City of Durham, Department of Water Management.
7. **Cleaning Trucks.** The City of Durham will provide necessary water to accommodate cleaning of trucks that leave city facilities. The Contractor shall assure trucks leaving the city's facilities are sufficiently clean as to not create hazardous or nuisance situations. It shall be the responsibility of the Contractor to provide any other utility service it may require.
8. **City inspections.** The Contractor shall allow and assist in the inspection of its activities by the City. All land application sites and vehicles used by Contractor must be available for inspection by City personnel at any time requested by the City.
9. **Contractor clean-up.** The Contractor is responsible for cleaning up waste materials generated in its work areas. The Contractor shall maintain its work areas in such a manner to protect the health and safety of all individuals using the area and to avoid any environmental contamination.

10. Information. The Contractor shall supply the following information prior to beginning services, and again, whenever such information changes, or when requested by the City:
 - a) List of equipment, type and number to be used.
 - b) An outline of procedures to be used by the Contractor at city facilities.
 - c) A plan of operation detailing the method of removal
 - d) An annual estimated schedule for removal showing the target time periods for sludge removal, as agreed to by the City.
 - e) The person or persons who will be serving as the Responsible Persons under Paragraph 6 above.
 - f) The emergency spill control plan described in Paragraph 5 above.
11. Contractor shall familiarize its personnel with the work areas of the City facilities and of the locations of the permitted sites.
12. Contractor shall coordinate its work with each City facility's daily operations and, where a conflict exists, the facility's operation shall take precedence.
13. Quality of Sludge. The City is responsible for ensuring that the sludge to be hauled from the City's plants has been tested to comply with permit and regulatory requirements, with the exceptions noted in this paragraph. The City is responsible for vector attraction reduction (except as noted) and pathogen testing and will document and certify that the sludges meet one of the Class B pathogen requirements, one of the vector attraction reduction requirements, except as further noted herein, and the ceiling concentrations limits for metals as specified in 40 CFR Part 503. Contractor is responsible for sludge sampling and testing as described in part (D) of this Exhibit A. In addition, if the City's process for vector attraction reduction has not been effective and the City has directed Contractor to perform alkaline stabilization in order to meet vector attraction reduction requirements, Contractor shall certify to the City that such process has been performed in accordance with requirements. If the City has directed that vector attraction reduction be achieved through land application, Contractor shall certify that such process has been performed in accordance with requirements.
14. Sludge Not Suitable for Application. If the Contractor determines that the City sludge is unsuitable for land application because of conditions such as rocks, weeds, or other substances, the City will make the sludge suitable, arrange for other disposal methods or will not require removal.

C. SLUDGE HAULING

1. The Contractor shall provide all the necessary materials, labor, and equipment for sludge removal, blending, transportation, and application.
2. The Contractor shall remove sludge designated by the City for removal from stockpiles in such a manner so as not to damage the stockpile pad, retaining walls, lawns, roadways, curbs or other structures.
3. Modifications to any structures necessary to facilitate the Contractor's operation may be done only with the permission of the City. It shall be the Contractor's responsibility to remove any modifications and restore the structures to the original condition at its own expense when requested to do so by the City and at the end of the contract period.
4. The Contractor shall remove sludge on a periodic basis during the approximate target time periods shown on the annual estimated schedule, no less than 5 times per year. Upon Contractor's determination of the exact time for sludge hauling and disposition, it will notify the City and provide the City of Durham with a copy of the specific schedule. This specific notice shall be no later than one week prior to sludge hauling. Changes in both the estimated schedule and specific schedule are permitted if approved in writing by the Director of the Department of Water Management or his designated representative.
5. Trucks and Identification. Sludge may be transported in side dump trailers only. End dump trailers with leak proof tailgates, or other leak-proof systems may be used only after approval from the Director of Water Management or his designated representative. Trucks and trailers must meet all state and local regulations. Open trucks must be covered with a tarpaulin or similar device as necessary to prevent windblown removal of material during transport. The capacity will be certified by an independent agency capable of performing such certifications, and Contractor shall furnish the City of Durham a copy of said certification prior to use. The truck must be uniquely and legibly numbered on the sides with letter and/or numbers at least 4 inches high. These identification numbers must correspond with the certification document as to capacity.
6. Hours. The Contractor shall not conduct operations required by this contract on Sundays or on City of Durham legal holidays without the permission of the City. Hauling and application of sludges shall be restricted to the hours between dawn and dusk.
7. Suspensions and Delays. An interruption in the Contractor's operation for a period of time longer than one (1) week shall be reported by the Contractor to the Department of Water Management immediately. The cessation of operations for

reason(s) other than equipment breakdown and reasons beyond the control of the Contractor shall be mutually agreed to by the Contractor and the City.

8. **Measuring Volume.** Sludge shall be measured by the cubic yard. Prior to conducting operations, Contractor and City shall agree on a method of measuring volume for trucks less than full, and a City representative shall verify the volume of any such truck on-site prior to its leaving the City facility. Measurements for other processes, such as on-site vector attraction reduction which may be done by Contractor, shall be by a method agreed to by Contractor and the City.
9. **Records of Sludge Removed.** The Contractor shall maintain records of the cubic yards of sludge removed from each plant and disposed of and such records shall be maintained in a form and manner as directed by the City. The Contractor shall maintain three (3) separate logs: as in "a", "b", and "c" below, to document sludge volume hauled from each plant site. The City shall be given copies of these logs on the next City work day. The logs required are described below:
 - a) The **LOADING LOG** showing the plant site location, date, time of loading, truck number, and volume of sludge loaded. This log will show all loads during the day at that plant.
 - b) The **TRUCK REPORT** showing the plant site, the time the vehicle left the plant site, the time the vehicle delivered the load, the driver's identity, vehicle number, the site designation and hauling distance.
 - c) The **RESIDUALS APPLICATION SUMMARY (RAS)** showing the applicator, the operator's name, and site designation, the field number and the volumes of and number of loads applied to each field.

Additional record keeping for periodic additional services such as on-site vector attraction reduction conducted by Contractor, vector attraction reduction through land application, and the volume of liquid sludge hauled shall be as agreed to by City and Contractor. Failure on the part of the Contractor to insure that the above required information is recorded correctly and legibly on the log sheets for each load hauled will result in the nonpayment for those loads not properly documented. The City reserves the right to inspect trucks and logs at any time.

D. SLUDGE SAMPLING AND ANALYSIS

1. Contractor will take sludge samples every other month of the sludge to be land applied or otherwise disposed of. Sampling shall be for the purpose of complying with testing requirements contained in the City's NCDENR permit and applicable regulations regarding standard soil fertility analysis, residuals analysis, and toxicity analysis, and shall be in accordance with the City's permit and regulations. Results from the sample analyses, and from the City's periodic vector attraction reduction and pathogen analysis shall determine the acceptability

of the sludge for land application. Contractor's sludge sampling shall determine the sludge application rates for the sludge sources tested.

2. Sample procedures at the two water reclamation facilities will be as follows:

- a) Time period and techniques. Approximately 10 days prior to the end of every even numbered month (i.e. the 20th to the 23 of February, April, June, August, October, and December), and with sufficient volumes of sludge and lead time to guarantee completion of testing prior to the end of the month, the Contractor's operations personnel shall collect a representative sample from the stockpiled dewatered sludge and from the water sludge on the concrete pads at each facility. This sample should be composited from individual grab samples throughout the stockpile(s) and should be a representative composite of the sludge on hand at the plant. The Contractor's representative will be responsible for assuring proper sampling techniques and mixing, along with any action deemed necessary in order to obtain a representative sludge sample in accordance with permit and regulatory requirements. The sample amount should be approximately two (2) one gallon "zip-lock" bags (plastic) for each of the City's sludge sources.
- b) Testing laboratory, custody, and turnaround time. The Contractor's personnel will properly seal and label the samples, then deliver one of the two samples from each sludge source to a private, certified laboratory of the Contractor's choice for analysis. The Contractor shall provide documentation to the City proving certification of the laboratory. The Contractor shall provide the City with a copy of the completed Chain of Custody sheets for the samples delivered. Certification and Chain of Custody documentation shall be in compliance the provisions of Title 15A of the North Carolina Administrative Code, Chapter 2, Subchapter 2H, Section .0800. The remaining sample will be delivered by the Contractor to the City and stored in refrigeration until the analytical results are obtained and verified. Contractor shall ensure that the laboratory completes testing within 5 days of Contractor's delivery of samples, and that the laboratory faxes/emails all results to the City's Operator-in-Responsible Charge and to Contractor immediately upon completion, followed by mailed copies.
- c) Costs of Sampling. Contractor is responsible for mailing and laboratory costs for all sampling for the Standard Soil Fertility Analysis and the Residuals Analysis described in this contract at no additional cost to the City. The Contractor will be responsible for sampling and analyzing of the annual Toxicity Characteristics Leaching Procedure (TCLP), and the City will pay the cost set forth in this Contract.

3. Review and Use of Sludge Testing Results

- a) Upon receipt of analytical results, the City of Durham personnel will review the results in comparison to EPA Part 503 ceiling concentration limits Table 1. Exceedances will be noted, and immediately communicated by City personnel to the appropriate individuals in the City, and to the Contractor.
 - b) Upon receipt of analytical results, the Contractor's technical personnel will review the results in comparison to EPA Part 503 ceiling concentration limits Table 1. Exceedances will be noted, and immediately communicated to the appropriate individuals in the City and with the Contractor.
 - c) Upon any exceedance in a pollutant ceiling concentration, Contractor will, within a day of transmittal of lab results, cease land application of the sludge from the City facility where the sludge exceedance occurred. Additional samples from the facility where the exceedance was recorded will be taken and analyzed for the exceeding parameter. When the average of all sampling results is below the ceiling concentration limit, land application operations for sludge from that facility may proceed.
 - d) Within one day of transmittal of lab results, Contractor will calculate the loading rates, based upon the data in the analytical results from the sampling and ensure that this information is promptly communicated so as to determine application rates and ensure correct application of all loads that are applied after the testing results have been received. The contractor shall send a copy of the Pre-Operating Checklist to the Operator in Responsible Charge before application begins. The checklist should show the amount of sludge to be applied based on the limiting factor.
- 4. Except as is noted in B.13 above, The City of Durham will be responsible for documenting and certifying that all wastewater sludges meet Pollution Concentration Criteria, Pathogen Reduction Criteria and Vector Attraction Reduction Criteria according to EPA Part 503 and North Carolina Department of Environment and Natural Resources (NCDENR) regulations. Documentation and certification shall not operate as a waiver of any claim the City may assert under the provisions of this Contract.
 - 5. The City at its option may sample more frequently than required in the EPA Part 503 regulations.
 - 6. Contractor shall not apply sludge if it has not received results of testing and analysis for such sludge, and made appropriate adjustments regarding application rates and other necessary determinations.
 - 7. The City will make available and/or provide the Contractor with the necessary information (i.e. pathogen reduction and vector attraction reduction) required for ensuring the material meets Part 503 requirements for land application suitability.

The necessary information shall cover each required monitoring period based on Part 503 monitoring requirements.

E. SLUDGE DEWATERING

1. During any dewatering activities provided by the Contractor, the Contractor shall:
 - a) Collect a representative sample from each truck load of residuals hauled.
 - b) Analyze the dewatered cake to determine its percent solids and provide the Superintendent's office with the percent solids results along with a copy of that load's trucking manifest.
 - c) Provide the Division with a properly preserved split cake sample within 24 hours of collection.
 - d) If a monthly set of split samples results in a greater than 5 percent average difference in percent solids values between the City and contractor, the City and contractor shall average the values for billing purposes and undertake steps to resolve such future differences.
2. The City anticipates that at some point in the future, it may decide to construct dewatering facility at the Brown WTP for the purpose of providing mechanical dewatering of the water plant residuals. Contractor is currently providing these dewatering services under contract with the City using a mobile belt press and other ancillary equipment through a more temporary, or short term, arrangement. At the appropriate time and if the City deems it to be in its best interest, the City may negotiate with Contractor, with Contractor's consent, for Contractor to provide for the design, construction and operation of the dewatering facility. These services may be provided through an amendment to the Agreement, as mutually agreed by both parties. Nothing in this Section of the Agreement shall require the City or Contractor to perform these services, nor shall it limit the City's right to engage a party other than Contractor to perform these services; it is simply intended to provide the City with the option to negotiate the delivery of these services through an amendment to the existing Agreement.

F. SLUDGE APPLICATION

1. Permit Compliance. Contractor shall apply sludge to land that has been legally permitted for application of the City's sludge in ratios that will ensure compliance with all permit and regulatory limits. The Contractor shall be solely responsible for compliance with the analytical, monitoring, application methodology, and reporting requirements of the land application Permit Number WQ0003504, dated July 9, 2012, and subsequent amendments and renewals. A copy of all information supplied to the State must be supplied to the City of Durham, Department of Water Management.

2. Landowner Agreement Responsibilities. Contractor is solely responsible for required communication with and reporting to landowners under the landowner agreements executed pursuant to the City's permit.
3. Application Method and Rates: The Contractor shall have approved equipment capable of both surface application and incorporation. The loading rates shall be determined according to approved agricultural standards and the Permit. The Contractor is solely responsible for the application of sludge to, testing of, and management of the land on which sludge is being applied. Among other things, the Contractor shall maintain accurate records of all trace metals or other parameters as required by the Permit and shall be responsible for maintaining acceptable application rates.
4. Application Sites: No sludge shall be applied to any land not duly and properly permitted by the NC DENR in the name of the City of Durham. The Contractor shall furnish to the City of Durham copies of the landowner agreements for each landowner who has agreed to accept City sludge and site maps locating each application site. The maps shall be marked showing the borders of the site and the NC DENR Permit number and all other pertinent information. Contractor shall ensure that each landowner executing a landowner agreement agrees not to accept sludge or other waste from other sources on the sites designated for the City for the time period of the City's permit.
5. Only sludges generated by the City of Durham plants may be applied to permitted sites designated for the City of Durham. Signs should be posted restricting access to the application sites at the field entry points and other locations as directed by local, state or federal regulations.
6. Contractor shall ensure that its employees know the boundaries and buffer zones of the application sites. Before applying the sludge, the Contractor shall designate the area to receive the sludge application through the use of marker flags.
7. The sludge application rates shall not exceed the limits set forth in the Permit or in 40 CFR Part 503, whichever is more restrictive.
8. Record Keeping: The Contractor shall make and maintain complete records of the application of sludge, including but not limited to all analytical data, dates of application, site of application, volumes applied, and any other information as deemed necessary by the City of Durham. Records shall include all records required in 40 CFR Part 503 and the Permit, section III. Copies of these records are to be submitted to the City of Durham on a monthly basis, for the months during which services were provided, by the last day of the following month.
9. The Contractor will secure amendments to the permit or other changes necessary to add additional land if such land is required to provide for the City's sludge removal needs. If state requirements change to require groundwater monitoring at

either existing sites or new sites, the Contractor will not be required to install or pay for groundwater monitoring wells. The Contractor shall, at the City's request, utilize a site or sites not requiring monitoring wells rather than a similar site requiring monitoring wells provided that the sites are comparable distances for transportation, and are of comparable quality for disposal. If the NC DENR requires any ground water monitoring wells on any sites to which City sludge was applied, the City shall pay for installation and testing. However, this obligation shall not be considered an admission on the City's part of responsibility for any problems causing the need for monitoring, and shall not limit the City's rights regarding Work performed by Contractor under this contract.

G. RECORD KEEPING AND REPORTING

The Contractor shall be responsible for maintaining all appropriate records specified in the Permit. The Contractor shall prepare the annual reports required in the Permit, and the annual reports required by 40 CFR Part 503 and any other state or federal regulations. The reports cited above shall be submitted to the City of Durham at least ten (10) working days prior to the specified due date of the respective government agency.